Status: Path 1 of [Dialog Information Services via Modem]

Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 3106900061...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
 ******* HHHHHHHH SSSSSSSS?
Status: Signing onto Dialog
 ****
ENTER PASSWORD:
 ******* HHHHHHHH SSSSSSSS? *******
Welcome to DIALOG
Status: Connected

Dialog level 02.02.11D

Last logoff: 19mar02 10:12:46
Logon file405 19mar02 12:58:55
KWIC is set to 50.
HILIGHT set on as '*'
BIBLIT is set ON as an alias for 77,35,583,65,2,233,99,473,474,475.
BUSLIT is set ON as an alias for 15,9,623,810,275,624,636,621,813,16,160,148,20,634.
SOFTGR is set ON as an alias for 278,256.
Banner display set SHORT.
****   ****
SYSTEM:HOME
Cost is in DialUnits
Menu System II: D2 version 1.7.8 term=ASCII
                    *** DIALOG HOMEBASE(SM) Main Menu ***

 Information:
  1.   Announcements (new files, reloads, etc.)
  2.   Database, Rates, & Command Descriptions
  3.   Help in Choosing Databases for Your Topic
  4.   Customer Services (telephone assistance, training, seminars, etc.)
  5.   Product Descriptions

 Connections:
  6.   DIALOG(R) Document Delivery
  7.   Data Star(R)

    (c) 2000 The Dialog Corporation plc   All rights reserved.

    /H = Help   /L = Logoff   /NOMENU = Command Mode

Enter an option number to view information or to connect to an online
 service. Enter a BEGIN command plus a file number to search a database
(e.g., B1 for ERIC).
?b biblit,buslit,softgr

>>>   278 does not exist
>>>1 of the specified files is not available
      19mar02 12:59:12 User264753 Session D57.1
           $0.00   0.222 DialUnits FileHomeBase
     $0.00   Estimated cost FileHomeBase
     $0.02   TYMNET
     $0.02   Estimated cost this search
     $0.02   Estimated total session cost   0.222 DialUnits

SYSTEM:OS - DIALOG OneSearch
   File 77:Conference Papers Index (c) 2002 Cambridge Sci Abs
   File 35:Dissertation Abs Online (c) 2002 ProQuest Info&Learning
   File 583:Gale Group Globalbase(TM) (c) 2002 The Gale Group

```
   File  65:Inside Conferences (c) 2002 BLDSC all rts. reserv.
   File   2:INSPEC (c) 2002 Institution of Electrical Engineers
   File 233:Internet & Personal Comp. Abs. (c) 2002 Info. Today Inc.
   File  99:Wilson Appl. Sci & Tech Abs (c) 2002 The HW Wilson Co.
   File 473:FINANCIAL TIMES ABSTRACTS (c) 2001 THE NEW YORK TIMES
*File 473: This file will not update after March 31, 2001.
It will remain on Dialog as a closed file.
   File 474:New York Times Abs (c) 2002 The New York Times
   File 475:Wall Street Journal Abs (c) 2002 The New York Times
   File  15:ABI/Inform(R) (c) 2002 ProQuest Info&Learning
*File  15: SELECT IMAGE AVAILABILITY FOR PROQUEST FILES
ENTER 'HELP PROQUEST' FOR MORE
   File   9:Business & Industry(R) (c) 2002 Resp. DB Svcs.
   File 623:Business Week (c) 2002 The McGraw-Hill Companies Inc
   File 810:Business Wire (c) 1999 Business Wire
   File 275:Gale Group Computer DB(TM) (c) 2002 The Gale Group
   File 624:McGraw-Hill Publications (c) 2002 McGraw-Hill Co. Inc
   File 636:Gale Group Newsletter DB(TM) (c) 2002 The Gale Group
   File 621:Gale Group New Prod.Annou.(R) (c) 2002 The Gale Group
   File 813:PR Newswire (c) 1999 PR Newswire Association Inc
   File  16:Gale Group PROMT(R) (c) 2002 The Gale Group
   File 160:Gale Group PROMT(R) (c) 1999 The Gale Group
   File 148:Gale Group Trade & Industry DB (c)2002 The Gale Group
   File  20:Dialog Global Reporter (c) 2002 The Dialog Corp.
   File 634:San Jose Mercury (c) 2002 San Jose Mercury News
   File 256:SoftBase:Reviews,Companies&Prods. (c)2002 Info.Sources Inc
          (To see coverage dates, enter SHOW FILES.)


       Set   Items   Description
       ---   -----   -----------
?s pitney and (shipping or shipment) (s) tracking
           17794   PITNEY
          870926   SHIPPING
          269799   SHIPMENT
          586244   TRACKING
           15840   (SHIPPING OR SHIPMENT)(S)TRACKING
       S1     200   PITNEY AND (SHIPPING OR SHIPMENT) (S) TRACKING
?s s1 and pd<991004
>>>One or more prefixes are unsupported
>>>  or undefined in one or more files.
>>>File 583 processing for PD=  : PD=991004
>>>    started at PD=100001 stopped at PD=890328
>>>File 99 processing for PD=  : PD=991004
>>>    started at PD=DEC.1200 stopped at PD=19910204
>>>File 474 processing for PD=  : PD=991004
>>>    started at PD=101111 stopped at PD=740608
>>>File 475 processing for PD=  : PD=991004
>>>    started at PD=191111 stopped at PD=810213
>>>File 15 processing for PD=  : PD=991004
>>>    started at PD=710000 stopped at PD=930107
Processing
Processed  10 of  25 files ...
>>>File 9 processing for PD=  : PD=991004
>>>    started at PD=100305 stopped at PD=980904
>>>File 810 processing for PD=  : PD=991004
>>>    started at PD=850116 stopped at PD=911127
>>>File 275 processing for PD=  : PD=991004
>>>    started at PD=140103 stopped at PD=881206
>>>File 624 processing for PD=  : PD=991004
>>>    started at PD=104 stopped at PD=921202
>>>File 636 processing for PD=  : PD=991004
>>>    started at PD=19880101 stopped at PD=19940316
Processing
>>>File 621 processing for PD=  : PD=991004
>>>    started at PD=00000000 stopped at PD=19910208
>>>File 813 processing for PD=  : PD=991004
>>>    started at PD=100000 stopped at PD=900920
>>>File 16 processing for PD=  : PD=991004
```

```
>>>     started at PD=19900101 stopped at PD=19950623
Processing
Processed  20 of  25 files ...
>>>File 160 processing for PD=  : PD=991004
>>>     started at PD=2103 stopped at PD=770314
>>>File 148 processing for PD=  : PD=991004
>>>     started at PD=140105 stopped at PD=830728
Processing
Processing
>>>File 634 processing for PD=  : PD=991004
>>>     started at PD=850602 stopped at PD=901209
Completed processing all files
              200  S1
         15227853  PD<991004
       S2       19  S1 AND PD<991004
?t s2/free/all
```

 2/8/1   (Item 1 from file: 233)
DIALOG(R)File 233:(c) 2002 Info. Today Inc. All rts. reserv.

00475626   97IK10-204
   Mail room mainstay tracks packs
   19971020
   Descriptors: Electronic Commerce; Internet

 2/8/2   (Item 1 from file: 9)
DIALOG(R)File   9:(c) 2002 Resp. DB Svcs. All rts. reserv.

02060564 (USE FORMAT 7 OR 9 FOR FULLTEXT)
APIs Could Open Up Shipping Options For Web Storefronts
February 09, 1998
WORD COUNT: 601

COMPANY NAMES: SYMANTEC CORP; TANDATA CORP
INDUSTRY NAMES: Applications software; Network hardware and software;
   Software
PRODUCT NAMES: Prepackaged software (737200); Development support
   software packages (737224); Networking software packages (737255);
   Business software packages NEC (737275)
CONCEPT TERMS: All product and service information; Product introduction
MARKETING TERMS: All media; Online
GEOGRAPHIC NAMES: North America (NOAX); United States (USA)

 2/8/3   (Item 2 from file: 9)
DIALOG(R)File   9:(c) 2002 Resp. DB Svcs. All rts. reserv.

02001433 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Monarch unveils labelers
November 03, 1997
WORD COUNT: 121

COMPANY NAMES: MONARCH MARKING SYSTEMS INC (*PITNEY* BOWES INC)
INDUSTRY NAMES: Industrial machinery; Packaging
PRODUCT NAMES: Packaging machinery (356500)
CONCEPT TERMS: All product and service information; Product introduction
GEOGRAPHIC NAMES: North America (NOAX); United States (USA)

 2/8/4   (Item 3 from file: 9)
DIALOG(R)File   9:(c) 2002 Resp. DB Svcs. All rts. reserv.

01967881 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Mail Room Mainstay Tracks Packs
October 20, 1997
WORD COUNT: 969

COMPANY NAMES: DHL AIRWAYS INC (DHL WORLDWIDE EXPRESS BV); *PITNEY* BOWES
    INC
INDUSTRY NAMES: Applications software; Software; Transportation
PRODUCT NAMES: Air courier services (451300); Business software packages
    NEC (737275)
CONCEPT TERMS: All company; All product and service information; Financial
    data; Product introduction
GEOGRAPHIC NAMES: North America (NOAX); United States (USA); World
    (WOR)

2/8/5   (Item 4 from file: 9)
DIALOG(R)File   9:(c) 2002 Resp. DB Svcs. All rts. reserv.

01566580 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Bar code company sets its sights on Asia
July 22, 1996
WORD COUNT: 525

COMPANY NAMES: ZEBRA TECHNOLOGIES CORP
INDUSTRY NAMES: Business services; Computer
PRODUCT NAMES: Optical scanning devices (357758); Optical scanning data
    services (737469)
CONCEPT TERMS: All company; All market information; Corporate strategy;
    Financial data; Foreign business; Market size; Sales
GEOGRAPHIC NAMES: North America (NOAX); Pacific Rim (PARX); Singapore
    (SIN); Southern & Eastern Asia (SSAX); United States (USA); World
    (WOR)

2/8/6   (Item 5 from file: 9)
DIALOG(R)File   9:(c) 2002 Resp. DB Svcs. All rts. reserv.

01229535 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Pitney Bowes
July 1995
WORD COUNT: 109

COMPANY NAMES: *PITNEY* BOWES INC
INDUSTRY NAMES: Applications software; Software
PRODUCT NAMES: Business software packages NEC (737275)
CONCEPT TERMS: All product and service information; Product introduction
GEOGRAPHIC NAMES: North America (NOAX); United States (USA)

2/8/7   (Item 1 from file: 275)
DIALOG(R)File 275:(c) 2002 The Gale Group. All rts. reserv.

01210415   SUPPLIER NUMBER: 06103693   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**'Robots' deliver the word from the mailroom: technology has entered the
    mailroom full thrust to provide savings in time and money.**
Nov, 1987
WORD COUNT: 1778   LINE COUNT: 00143

 SPECIAL FEATURES: illustration; photograph
 DESCRIPTORS: Technology; Office Automation; Mail Processing; Cost
  Reduction; Robots; Automation; Applications
 FILE SEGMENT: MI File 47

2/8/8   (Item 1 from file: 636)
DIALOG(R)File 636:(c) 2002 The Gale Group. All rts. reserv.

02281185   Supplier Number: 44402218 (USE FORMAT 7 FOR FULLTEXT)
SUPER-FAST FAX MACHINES HAVE SUPER SHORT PROTOCOLS
Feb, 1994
Word Count: 992
PUBLISHER NAME: Worldwide Videotex

INDUSTRY NAMES: BUSN (Any type of business); CMPT (Computers and Office
   Automation)

   2/8/9   (Item 2 from file: 636)

02213775   Supplier Number: 44203518 (USE FORMAT 7 FOR FULLTEXT)
PITNEY BOWES INTRODUCES NEW FLAGSHIP FAX MACHINES
Nov, 1993
Word Count: 969
PUBLISHER NAME: Worldwide Videotex
INDUSTRY NAMES: BUSN (Any type of business); CMPT (Computers and Office
   Automation)

   2/8/10   (Item 1 from file: 16)

02594887   Supplier Number: 43447241 (USE FORMAT 7 FOR FULLTEXT)
**NEW PATHFINDER (R) PLUS PRINTER PRINTS, APPLIES AND COLLECTS DATA... ALL IN
   ONE STROKE!**
Nov 12, 1992
Word Count: 746
PUBLISHER NAME: Various
COMPANY NAMES: *Monarch Marking Systems Inc.
EVENT NAMES: *330 (Product information)
GEOGRAPHIC NAMES: *1USA (United States); 1U3OH (Ohio)
PRODUCT NAMES: *3579648   (Bar Code & OCR Labelers); 7372420   (Database
   Software); 7372600   (Computer Network & Communications Software)
INDUSTRY NAMES: BUS (Business, General); BUSN (Any type of business)
NAICS CODES: 333319 (Other Commercial and Service Industry Machinery
   Manufacturing); 51121 (Software Publishers)
TRADE NAMES: Platform Data Base; Monarch Platform Data Base; Pathfinder
   Plus; Pathfinder Plus Transfer
SPECIAL FEATURES: COMPANY

   2/8/11   (Item 2 from file: 16)

02526345   Supplier Number: 43345292 (USE FORMAT 7 FOR FULLTEXT)
Pitney Bowes Introduces New STAR (TM) Carrier Management Systems
Oct 1, 1992
Word Count: 1115
PUBLISHER NAME: Various
COMPANY NAMES: *Pitney* Bowes Inc.
EVENT NAMES: *330 (Product information)
GEOGRAPHIC NAMES: *1USA (United States); 1U1CT (Connecticut)
PRODUCT NAMES: *3579510   (Mailing Machines)
INDUSTRY NAMES: BUS (Business, General); BUSN (Any type of business)
NAICS CODES: 333313 (Office Machinery Manufacturing)
TICKER SYMBOLS: PBI
TRADE NAMES: STAR 150; STAR 170; STAR 180
SPECIAL FEATURES: COMPANY

   2/8/12   (Item 3 from file: 16)

01981623   Supplier Number: 42537625 (USE FORMAT 7 FOR FULLTEXT)
MONARCH MARKING SYSTEMS OFFERS LABOR REPORTING SOFTWARE
Nov 22, 1991
Word Count: 479
PUBLISHER NAME: Various
COMPANY NAMES: *Deltron Inc.; Monarch Marking Systems Inc.
EVENT NAMES: *330 (Product information)
GEOGRAPHIC NAMES: *1USA (United States); 1U3OH (Ohio)

PRODUCT NAMES: *7372430   (Engineering & Scientific Software)
INDUSTRY NAMES: BUS (Business, General); BUSN (Any type of business)
NAICS CODES: 51121 (Software Publishers)
SPECIAL FEATURES: COMPANY

 2/8/13   (Item 4 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv.

01709977   Supplier Number: 42133269
Pitney Bowes sets up divisional center in S.A.
June 4, 1991
PUBLISHER NAME: Express-News Corporation
COMPANY NAMES: *Pitney* Bowes Inc.
EVENT NAMES: *440 (Facilities & equipment)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3579000   (Business Machines NEC)
INDUSTRY NAMES: BUSN (Any type of business); REG (Business, Regional)
NAICS CODES: 333313 (Office Machinery Manufacturing)
TICKER SYMBOLS: PBI
SPECIAL FEATURES: LOB; COMPANY

 2/8/14   (Item 5 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv.

01353379   Supplier Number: 41601368
Pitney Bowes - Company Report
Oct 8, 1990
PUBLISHER NAME: Investext Group
COMPANY NAMES: *Pitney* Bowes Inc.
EVENT NAMES: *850 (Financial analysis)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3579000   (Business Machines NEC)
INDUSTRY NAMES: BANK (Banking, Finance and Accounting); BUSN (Any type
 of business)
NAICS CODES: 333313 (Office Machinery Manufacturing)
TICKER SYMBOLS: PBI
SPECIAL FEATURES: LOB; COMPANY

 2/8/15   (Item 6 from file: 16)
DIALOG(R)File 16:(c) 2002 The Gale Group. All rts. reserv.

01331959   Supplier Number: 41569588
Pitney Bowes - Company Report
Sept 25, 1990
PUBLISHER NAME: Investext Group
COMPANY NAMES: *Pitney* Bowes Inc.
EVENT NAMES: *850 (Financial analysis)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3579000   (Business Machines NEC)
INDUSTRY NAMES: BANK (Banking, Finance and Accounting); BUSN (Any type
 of business)
NAICS CODES: 333313 (Office Machinery Manufacturing)
TICKER SYMBOLS: PBI
SPECIAL FEATURES: LOB; COMPANY

 2/8/16   (Item 1 from file: 20)
DIALOG(R)File 20:(c) 2002 The Dialog Corp. All rts. reserv.

05853836 (USE FORMAT 7 OR 9 FOR FULLTEXT)
(BW-RECAP-02) -2-
June 22, 1999
WORD COUNT: 1188

COMPANY NAMES: Aspect Telecommunications Corp; Media Metrix Inc

DESCRIPTORS: Sales; Marketing; Company News; New Products & Services
COUNTRY NAMES/CODES: United States of America (US)
REGIONS: Americas; North America; Pacific Rim

 2/8/17   (Item 2 from file: 20)

02890368
***Pitney* Bowes Launches Ergonomic Solutions Service Improves Woker Safety,
   Reduces Costs by Up to 30%**
September 22, 1998
WORD COUNT: 1112

DESCRIPTORS: Equities--Market
COUNTRY NAMES/CODES: United States of America (US)
REGIONS: Americas; North America; Pacific Rim
PROVINCE/STATE: Connecticut
SIC CODES/DESCRIPTIONS: 3570 (ComputerandOffice Equipment)

 2/8/18   (Item 3 from file: 20)

01686417   (USE FORMAT 7 OR 9 FOR FULLTEXT)
RSA Selected by webMethods to Provide Secure XML-Based Web Automation
May 13, 1998
WORD COUNT: 637

COMPANY NAMES: Security Dynamics Technologies Inc.
COUNTRY NAMES/CODES: United States of America (US)
REGIONS: North America
PROVINCE/STATE: Massachusetts
SIC CODES/DESCRIPTIONS: 7372 (Prepackaged Software)

 2/8/19   (Item 4 from file: 20)

01517776   (USE FORMAT 7 OR 9 FOR FULLTEXT)
***Pitney* Bowes Displays Diverse Family of New Product Solutions at 1998
   MAILCOM Conference**
April 30, 1998
WORD COUNT: 824

COMPANY NAMES: *Pitney* Bowes Inc.
DESCRIPTORS: New Products & Services; Equities Market
COUNTRY NAMES/CODES: United States of America (US)
REGIONS: North America
PROVINCE/STATE: Connecticut
SIC CODES/DESCRIPTIONS: 3570 (Computer & Office Equipment)
?t s2/full/1,2,4,6,7,11

 2/9/1   (Item 1 from file: 233)

00475626   97IK10-204
   Mail room mainstay tracks packs
   Karpinski, Richard
   InternetWeek , October 20, 1997 , n686 p1, 116, 2 Page(s)
   ISSN: 0746-8121
   Languages: English
   Document Type: Articles, News & Columns
   Geographic Location: United States
   Reports that *Pitney* Bowes is developing a Personal *Shipping* System
application that it will deploy as a free service from its Web site early
next year. Says the system will provide users access to all major overnight

components for some client-side functions, he added.

"So right now, I have more software expertise than you might expect from a company best known for mechanical postage meters," Shannon said. "The challenge is to marshal our core skills, put them together with our new Internet-based competencies and respond quickly to the market."

Even with a good head start, building a single application that "scrapes" a variety of public Web sites and returns data in a meaningful form is not an easy task.

The WebMethods Web Automation product that sits at the center of the solution, which Milestone's Reynolds described as an "agent" application, sends out requests in the form of scripts to the various carrier Web sites. What comes back is an HTML string that the system parses into records that get placed in a database and then can be accessed locally by the application.

Shannon already reports a few blips in the development process have pushed the system's launch date back a few months. Long term, the company is still searching for the best way to accomplish Web-based distributed computing.

"It's just not easy today to broker transactions over the Internet at a high volume," Shannon said.

He added that his company is still exploring what revenue opportunities the service may offer in the long term.

COMPANY NAMES: DHL AIRWAYS INC (DHL WORLDWIDE EXPRESS BV); *PITNEY* BOWES
   INC
INDUSTRY NAMES: Applications software; Software; Transportation
PRODUCT NAMES: Air courier services (451300); Business software packages
   NEC (737275)
CONCEPT TERMS: All company; All product and service information; Financial
   data; Product introduction
GEOGRAPHIC NAMES: North America (NOAX); United States (USA); World
   (WOR)

 2/9/6   (Item 5 from file: 9)
DIALOG(R)File   9:Business & Industry(R)
(c) 2002 Resp. DB Svcs. All rts. reserv.

01229535   (THIS IS THE FULLTEXT)
Pitney Bowes
**(*Pitney* Bowes introduced SendIt software, which allows low-volume mailers
   to find the best mailing and shipping rates)**
Windows Magazine, v 6, n 8, p 74
July 1995
DOCUMENT TYPE: Journal ISSN: 1060-1066 (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 109

TEXT:
Even as the U.S. Post Office boosts postal rates, you can fight rising postal costs. Sen-It, aimed at companies with 20 or fewer employees that ship less than 10 packages daily, helps you find the best mailing and *shipping* rates for the U.S. Postal Service, UPS, RPS and FedEx, and allows you to program in a local or regional service. *Pitney* Bowes' SoftGuard Rate Protection service, available with Send-It, allows up to six rate updates per year so that you'll have the latest information. Send-It produces address labels and *tracking* and tracing document labels. It will calculate carrier rating, C.O.D. insurance and dimensional weighing. $795.
Pitney Bowes

800-MRBOWES, 203-351-7098.

COMPANY NAMES: *PITNEY* BOWES INC
INDUSTRY NAMES: Applications software; Software
PRODUCT NAMES: Business software packages NEC (737275)
CONCEPT TERMS: All product and service information; Product introduction
GEOGRAPHIC NAMES: North America (NOAX); United States (USA)

 2/9/7   (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2002 The Gale Group. All rts. reserv.

01210415   SUPPLIER NUMBER: 06103693   (THIS IS THE FULL TEXT)
**'Robots' deliver the word from the mailroom: technology has entered the
  mailroom full thrust to provide savings in time and money.**
Whitman, George
Administrative Management (the Magazine of Office Administration and
Automation), v48, n11, p19(4)
Nov, 1987
ISSN: 0884-5905   LANGUAGE: ENGLISH   RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1778   LINE COUNT: 00143

ABSTRACT: Technology is enabling companies to enjoy time and money savings
in their mail operations. Products such as roboticized letter carriers and
sophisticated, programmable facsimile machines have appeared, and tools
such as electronic scales are now available for tracking and monitoring
mail room expenses. Companies are also able to sort and code outgoing mail
automatically to speed its delivery.

TEXT:
     "Robots' Deliver The Word From The Mailroom
     Not since Genghis Khan organized a system of post-roads and post
riders 700 years ago has mail been given a boost to equal that of the
microprocessor and artificial intelligence. Yesteryear's collection of
primitive electro-mechanical machines is being replaced by the speed and
efficiency of sleek electronic microprocessing devices, machines, and
systems --and robots!
     "Robot' comes from a Czech author's coined word implying forced
labor, or slavery. When Abraham Lincoln said, "He who would be no slave
must consent to have no slave,' he was referring to human beings. In our
present context, we can fairly say that he who would be no slave to his
mailroom will do well to buy a robot--or several.
     Take the robotized letter carrier, for example. This four-wheeled
mailroom menial trudges faithfully through its appointed office rounds at
about one mph to deliver incoming, and pick up outgoing, mail without
complaints or sore feet, overloading, or without appeals to the shop
steward. With no hindrance from office gossip, the water cooler group, or
the coffee break crowd, it operates automatically by remote control
software in a seemingly human way, which is a reasonably accurate
definition of a robot. Robots are also examples of artificial intelligence.
     Following a guidepath of either an invisible fluorescent material on
carpeting or a reflective tape on hard-surfaced floors, these vehicles read
operating instructions at each stop (by chemicals or by an on-board
computerized bar-code reader) which tell the robot what to do. "What to do'
extends to sensing whether a tray or carton contains mail to go, and
whether it should be picked up. Some models even include a door opening
(and closing) feature that allows the robot to travel between, and through,
doorways without help from humans. Their dimensions allow easy access into
and out of passenger elevator cars.
     Well endowed with safety features such as "beep' tones, distinctive
chimes, and flashing lights, the vehicle faithfully observes writer Dr.
Isaac Asimov's fictional first law of robotics: "A robot may not injure a
human being . . .'

Stationary robots

But not all robots travel, or even move much. Before the word "computer' was coined, less than a lifetime ago, all such machines were known as robots. A facsimile machine, for example, could be called a "stationary robot' without arms or legs but one that can deliver your mail around the corner or across the oceans in seconds via telephone lines and communications satellites. Since the corporate mailroom is the communications center of American business enterprise, these stationary robots mesh perfectly with a mailroom's function to reduce its dependence on overnight courier services. With more than 525,000 units now in place, that number is expected to double by 1990.

Some of these new, technologically advanced fax units provide not only facsimile transmissions and receptions, but act as long distance plain paper copiers (capable of enlarging and reducing) and as sophisticated touchtone telephone systems. They can fax material directly from books, bound pamphlets, and ledgers, an especially valuable feature for mailroom employment because message texts do not have to be keyed into a computer (as does electronic mail). Such texts can include handwritten copy.

These versatile mailroom serfs can even be put in lockstep with computers and their networks to share and exchange information. Their memory software permits selective transmissions to nearly 100 preset telephone numbers at the push of a button, and can allot individual "mailboxes' for confidential or eyes-only matters. They can be programmed with a "store and forward' feature to send messages automatically when telephone rates are at their lowest. Without an operator present, the speed-dialing ability eliminates the expense and delay of misdialed numbers. Such self-regulating and adept electronics are vital to mailroom operations of any size.

Of scales

Remember, it is justice that is blind, not her scale. Modern electronic scales, thanks to powerful and compact microprocessors (along with software), have taken the guesswork out of mail and package routing, postage expenditure, and fiscal accounting. The days of spring-loaded or balance-beam weighing of mail now seem as quaint as running boards and rumble seats in automobiles. By removing the burden of decision making from the scale's human operator (who can often be mistaken) the microprocessor quickly and effortlessly reduces wasted postage from some (or a lot) to none.

In addition, when interfaced with a swarm of peripherals now available, the scale becomes a system in itself. Such a system can, among other things, print manifests for package shipping operations or charge back postage by the mailroom to individual departments. Its software contains extensive postage rate information, automatic ZIP-to-zone conversion, and rate shopping capabilities. The programmable keyboard provides fields for remarks, operator prompts, identification of packages, piece counts, and many other features contributing to that hallmark of a successful business: control.

Gaining control

Since "control' means to exercise a restraint or a dominion over something, it is the rod a comptroller wields to govern and account for expenditures of money. For generations, the mailroom was perceived as a "cost of doing business' expense not worthy of the attention of bookkeepers, accountants, or auditors much less that of lordly comptrollers. Finally, postage rate increases of several hundred percent over the years gained their attention (along with a similar increase in labor, overhead, etc.), and the financial department rode off in all directions, forcing a reckoning.

Mailroom manufacturers were quick to oblige with new machinery that (thanks to the microchip) handles not only the mailing job, but records, attributes, charges, counts, and otherwise tells comptrollers precisely what it has done. One postage meter manufacturer, for example, provides a system that recharges a meter with postage by remote control. A simple telephone call to its toll-free data center to exchange identification and other protocols will result in the meter being reset with postage funds to ensure continued mailing without an inconvenient trip to the post office--all in less than 90 seconds. One must, of course, have sufficient funds in the designated bank to cover the amount of postage requested.

This technology further helps the comptroller by notifying the Postal

Service of the transaction, instructing the bank to forward the payment, and sending the company a complete statement of the whole deal. This valuable service also salves lost production time that would otherwise accrue from an empty meter. Security is maintained by matching account numbers, meter numbers, and a unique resetting number which changes with each use. The identification and other numbers are simply transmitted to the data center by touchtone telephone (which is itself a tribute to robotics).

Bar codes and ZIP 4

Although few business mailrooms require optical character readers (OCRs) to sort incoming mail, the U.S. Postal Service needs hundreds of them to move mountains of letters. Private enterprises can help both the USPS and themselves by using 9-digit ZIP Codes, by sorting to carrier routes, and by bar coding outgoing mail.

Bar codes are easily applied to the mailing piece in the addressing process. These little marks permit a finer sort in the postal system, thus speeding the delivery of business communications. Because bar code readers are less expensive than OCRs, many post offices use them. For the same reasons of speed and cost, mailrooms profitably employ bar code readers to sort incoming mail to 9-digit ZIPs representing in-house departmental mail stops.

In addition to offering more efficient handling of the mailing piece, combined ZIP 4 and pre-bar coded outgoing mail provide postage discounts for a rapid payback to the cost of the machine.

A prime advantage to the mailroom of the Postal Service's ZIP 4 program is the ease with which the company's mailing list can acquire the additional four digits. Most mediumand small-volume mailers have converted their address lists from paper, plastic or metal plates to microcomputer diskettes. After sending these diskettes containing the mailing list with 5-digit ZIP Codes to the USPS, along with a blank diskette for each input diskette submitted (or allowing the Postal Service to write over your input diskette), you'll wait about three weeks for their return with the extra four digits.

Upon return, they will be accompanied with a computer printout of addresses that could not be encoded and the reason. These usually are attributable to non-existent or transposed street numbers and the like. When the mailing list is cleaned electronically, savings are realized in postage, addressing, and list maintenance costs--thanks to the microprocessor. Tandy Corporation, Fort Worth, TX, for example, with a mailing list of thirty million addresses, discovered that 10% were either bad addresses or duplicated. Cleaning the list cut their postage bill by $700,000 in just eight months. Mailing labels generated from such computerized lists can be formatted to your own specifications by any compatible software system for use on a number of label-affixing machines.

Wide-ranging impact

The computer's ability to remotely guide a system that permits the trimming and folding of computer-generated documents, enclosing them in an envelope, sealing, metering, and stacking outgoing letters in one swooping, nonstop process is a demonstration of mailroom robotics at its best. And best of all, the system is available in both high-production configurations and tabletop models for the small and medium-size company mailroom.

The impact that the microprocessor, robotics, semiconductor chips, and other electronic marvels have had on mail communications is tremendous, but as Shakespeare said, "What's past is prologue.' (The Tempest)

Or put another way, "You ain't seen nothin' yet!'

Photo: *Pitney* Bowes' A2000 Carrier Management System produces *shipping* manifest documents, and invoicing and *tracking* of information.

Photo: IMS/Hasler's IMS 300 Series modular mailing system permits postage chargebacks to up to 400 accounts.

Photo: Sprint HSE robot from Bell Howell.

Photo: Mail Sorting Conveyor System from Novak, Plainfield, NJ, cuts flat mail sorting in half, saving labor costs. Mail automatically moves to bags or boxes.

Photo: Envelope inserting machines are a specialty of AMSCO, Dallas.

SPECIAL FEATURES: illustration; photograph
DESCRIPTORS: Technology; Office Automation; Mail Processing; Cost